

NOBLE METAL CONTACTS FOR MICRO-ELECTROMECHANICAL SWITCHES

Abstract

A semiconductor micro-electromechanical system (MEMS) switch provided with noble metal contacts that act as an oxygen barrier to copper electrodes is described. The MEMS switch is fully integrated into a CMOS semiconductor fabrication line. The integration techniques, materials and processes are fully compatible with copper chip metallization processes and are typically, a low cost and a low temperature process (below 400°C). The MEMS switch includes: a movable beam within a cavity, the movable beam being anchored to a wall of the cavity at one or both ends of the beam; a first electrode embedded in the movable beam; and a second electrode embedded in an wall of the cavity and facing the first electrode, wherein the first and second electrodes are respectively capped by the noble metal contact.